

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Effects of virtual reality training versus traditional balance training on balance and fall risk in people with multiple sclerosis

Protocol summary

Summary

The purpose of this double-blinded, randomized controlled trial study is to compare the effect of virtual reality training versus traditional balance training on balance and fall risk in people with multiple sclerosis. Inclusion criterias include: ability to stand and walk independently, maximum score of 53 on BBS, EDSS below 5/5 and MMSE more than 24. Persons are ineligible for the study if they have an exacerbation of symptoms due to relapse within 3 months of the baseline measurement and any musculoskeletal or neurological conditions except MS limiting balance or gait. Forty patients with MS will be assigned randomly in virtual reality training or traditional balance training (control) group. Participants will receive 45 minutes training session, 3 times per week for 6 weeks. The participants in the traditional balance training group will receive common balance activities while participants in virtual reality training group will practice balance activities using Kinect. Outcome measures for assessing Various aspects of balance and risk of fall are force plate, Timed Up and Go, 10 meter Walk gait speed, Berg Balance Scale, Activities Specific Balance Confidence and Fall Efficacy Scale International. All measures will be collected at baseline and at the end of training.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2017110737286N1**

Registration date: **2017-11-17, 1396/08/26**

Registration timing: **prospective**

Last update:

Update count: **0**

Registration date

2017-11-17, 1396/08/26

Registrant information

Name

Farshad Molhemi

Name of organization / entity

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Ahvaz Jundishapur University of Medical Sciences

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Recruitment status

Recruitment complete

Funding source

Ahvaz Jundishapur University of Medical Science

Expected recruitment start date

2017-12-06, 1396/09/15

Expected recruitment end date

2018-12-06, 1397/09/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Effects of virtual reality training versus traditional balance training on balance and fall risk in people with multiple sclerosis

Public title

Effect of two types of exercises on balance performance in patients with multiple sclerosis

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria: A definite diagnosis of MS, relapsing-remitting or secondary progressive types, as diagnosed

by a neurologist; Ability to stand independently; Ages between 18-64 years; Ability to walk independently; Maximum score of 53 on the Berg Balance Scale; MMSE more than 24; EDSS below 5/5 Exclusion criteria: Experiencing an exacerbation of symptoms due to relapse within 3 months of the baseline measurement; Any musculoskeletal or neurological conditions except MS limiting balance or gait; Uncorrected Auditory or visual impairment; Pregnancy; Involving in the other planned treatment; Using drugs which affecting balance or gait.

Age

From **18 years** old to **64 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Randomized

Randomization description**Blinding (investigator's opinion)**

Double blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ahvaz Jundishapur University of Medical Science

Street address

Ground floor, Vice Chancellor for Research and Technology, Ahvaz Jundishapur University of Medical Science

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Postal code

6135715794

Approval date

2017-10-28, 1396/08/06

Ethics committee reference number

IR.AJUMS.REC.1396.558

Health conditions studied**1****Description of health condition studied**

Multiple Sclerosis

ICD-10 code

G35

ICD-10 code description

Multiple sclerosis

Primary outcomes**1****Description**

Static balance

Timepoint

Before and after intervention

Method of measurement

Force plate

2**Description**

Dynamic balance

Timepoint

Before and after intervention

Method of measurement

Time Up and Go Test, 10 meter walk test

3**Description**

Functional balance

Timepoint

Before and after intervention

Method of measurement

Berg balance scale

4**Description**

Balance Confidence

Timepoint

Before and after intervention

Method of measurement

Activities Specific Balance Confidence

5**Description**

Fear of falling

Timepoint

Before and after intervention

Method of measurement

Fall efficacy scale international

Secondary outcomes

empty

Intervention groups

1

Description

Control group: Perform traditional Balance exercises; Participants received 45-minute individualized (1 trainer to 1 participant) training sessions, 3 times a week for 6 weeks.

Category

Rehabilitation

2

Description

Intervention group: Perform Balance exercises using Kinect; Participants received 45-minute individualized (1 trainer to 1 participant) training sessions, 3 times a week for 6 weeks.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Musculoskeletal Rehabilitation Research Center

Full name of responsible person

Zahra Najarzadeh

Street address

Musculoskeletal Rehabilitation Research Center,
School of Rehabilitation Sciences, Ahvaz Jundishapur
University of Medical Sciences,

City

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Ahvaz Jundishapur University of Medical Science

Full name of responsible person

Dr. Mohamad Badvi

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Ground floor, Vice Chancellor for Research and
Technology, Ahvaz Jundishapur University of Medical
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Ahvaz

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Ahvaz Jundishapur University of Medical Science

Proportion provided by this source

100

Public or private sector

empty

Domestic or foreign origin

empty

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

empty

Person responsible for general inquiries

Contact

Name of organization / entity

Musculoskeletal Rehabilitation Research Center,
Ahvaz Jundishapur University of Medical Sciences, Ah

Full name of responsible person

Farshad Molhemi

Position

MSc Student of Physical Therapy

Other areas of specialty/work

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Fax**Email****Web page address****Sharing plan****Deidentified Individual Participant Data Set (IPD)**

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty